

a<sup>2</sup> optimized portion of the amino acid sequence corresponding to ga\_7683974 (SEQ ID NO: 31) is set forth in SEQ ID NO: 40, the optimized portion of the amino acid sequence corresponding to ga\_9453932 (SEQ ID NO: 32) is set forth in SEQ ID NO: 41, the optimized portion of the amino acid sequence corresponding to ga\_9504136 (SEQ ID NO: 33) is set forth in SEQ ID NO: 42, the optimized portion of the amino acid sequence corresponding to ga\_12715389 (SEQ ID NO: 34) is set forth in SEQ ID NO: 43, the optimized portion of the amino acid sequence corresponding to ga\_13398395 (SEQ ID NO: 35) is set forth in SEQ ID NO: 44, two optimized portions of the amino acid sequences corresponding to ga\_13611202 (SEQ ID NO: 36) corresponding to translation of two different reading frames for this nucleotide sequence are set forth in SEQ ID NOS: 45 and 46, the optimized portion of the amino acid sequence corresponding to ga\_15018831 (SEQ ID NO: 37) is set forth in SEQ ID NO: 47, and two optimized portions of amino acid sequences corresponding to ga\_15856828 (SEQ ID NO: 38) corresponding to translation of two different reading frames for this nucleotide sequence are set forth in SEQ ID NOS: 48 and 49.

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#### In the Claims:

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1. A purified and isolated caspase polypeptide comprising an amino acid sequence that is at least about 98% identical to 30 contiguous amino acids of an amino acid sequence ~~selected from the group consisting of sequences~~ set forth in SEQ ID NOS: ~~2, 4, 6, 8, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77 and 79~~, wherein said polypeptide comprises a QACXG domain and possesses caspase activity.

a<sup>3</sup> 2. A purified and isolated caspase polypeptide comprising at least about 20 contiguous amino acids of an amino acid sequence ~~selected from the group consisting of sequences~~ set forth in SEQ ID NOS: ~~2, 4, 6, 8, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77 and 79~~, wherein said polypeptide comprises a QACXG domain and possesses caspase activity.

3. A purified and isolated caspase polypeptide according to claim 2 comprising at

least about 40 contiguous amino acids of an amino acid sequence ~~selected from the group consisting of sequences~~ set forth in SEQ ID NOS: ~~2, 4, 6, 8, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77 and 79,~~ wherein said polypeptide comprises a QACXG domain and possesses caspase activity.

a<sup>3</sup> 4. A purified and isolated caspase polypeptide according to claim 1 comprising an amino acid sequence ~~selected from the group consisting of sequences~~ set forth in SEQ ID NOS: ~~2, 4, 6, 8, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77 and 79.~~

5. A purified and isolated caspase polypeptide according to claim 1 or 2 comprising at least one subunit of human caspase-12.

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a<sup>4</sup> 7. A purified and isolated caspase polypeptide according to claim 1 encoded by a polynucleotide that hybridizes under stringent conditions to a nucleotide sequence ~~selected from the group consisting of sequences~~ set forth in SEQ ID NOS: ~~1, 3, 5, 7, 9, 10, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78~~ and the non-coding strands thereof.

8. A purified and isolated fusion polypeptide comprising a caspase polypeptide according to claim 1.

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